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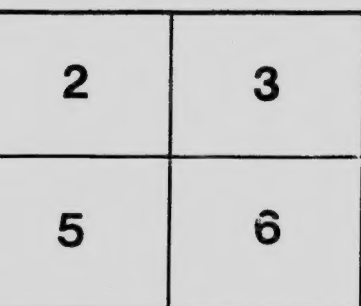
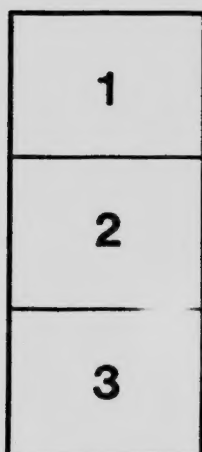
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DOMINION OF CANADA
DEPARTMENT OF AGRICULTURE
DOMINION EXPERIMENTAL FARMS

DIVISION OF CEREALS

THE BEST VARIETIES OF GRAIN

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THE BEST VARIETIES OF GRAIN.

By CHAS. E. SAUNDERS, B.A., Ph.D., Dominion Cerealist.

In order to reap the largest and most profitable crops, it is not only necessary to maintain the fertility and tilth of the soil, by the use of a judicious rotation and the addition of sufficient manure or fertilizers, but care must be taken to sow thoroughly clean seed derived from varieties best adapted to the soil and climatic conditions of each farm. The present pamphlet deals with the choice of varieties and presents conclusions drawn from the tests which have been conducted on the various Dominion Experimental Farms and Stations for many years.

As a rule it is not advisable for farmers to experiment with new sorts which are recommended by the vendors only; but those grain growers who have a special liking for experimental work will find the testing of new kinds a very interesting, though expensive, occupation. For most people, it is better to leave to government institutions all preliminary experiments, and not to grow on their own farms any varieties that have not already been shown to be good. There will always be plenty of scope, among recommended sorts, for very interesting comparative trials, which may be made with little or no loss of either time or money.

It is not the policy of the Dominion Experimental Farms to advise the cultivation of new varieties of grain until they have been carefully tested in, at least, some parts of Canada, though, of course, it is impossible to withhold new sorts from the public long enough to try them in all sections of our great country. Furthermore, new varieties, whether originated at Ottawa or elsewhere, are not recommended unless they have shown some point of superiority over the older and better known sorts. Novelty ought to be recognized as a disadvantage unless accompanied by some definite and significant gain.

In order that grain growers may be able to make an intelligent choice among the varieties recommended, brief descriptions of them are here given. Other very good sorts, almost or quite equal in value to some of those which are recommended, could have been added to this list, but it is manifestly undesirable to mention the names of an unnecessarily large number of varieties.

It should be explained that all those varieties to which Ottawa numbers are attached are new cross-bred sorts or selections produced by the Dominion Cerealist at the Central Experimental Farm, Ottawa.

DESCRIPTIONS OF LEADING VARIETIES.

Winter Wheat.

Dawson's Golden Chaff.—Very productive, beardless, straw stiff, grains "white" and inclined to be soft, excellent for pastry, but not very desirable for bread-making. Hardy where there is a reasonable snow-fall.

Egyptian Amber.—Almost equal to Dawson's Golden Chaff in field characters and superior for bread-making. Bearded, grains red.

Turkey Red.—In commerce, often called Kansas Red or Alberta Red; practically identical with Kharkov (the latter is, however, supposed to be more productive). Grains red and usually rather hard. Heads bearded, straw moderately stiff. The best winter wheat for bread-making purposes. This variety is adapted to rather dry districts and does not usually do so well where the snow-fall is heavy.

Spring Wheat.

Red Fife Group—Late Ripening Varieties.

Red Fife.—Formerly the standard variety of Canada. Beardless, straw rather long and fairly stiff, kernels red and usually hard. Gives a good yield under a variety

of conditions, but is too late in ripening for the greater part of Canada. This wheat is in the highest class for milling and bread-making. The selected strain grown on the Dominion Experimental Farms, *Red Fife Ottawa 17*, is exceptionally pure but not otherwise materially different from the ordinary stock.

White Fife.—Practically identical with *Red Fife* but has yellowish instead of reddish bran. The popular ideas about the superior adaptability of *White Fife* to certain special field conditions are incorrect, as are also those about its inferiority to *Red Fife* for bread-making. This variety should not be sown unless the farmer can secure an extra high price for a "white" wheat. As a rule "red" wheats sell better in Canada.

White Russian.—Ordinary, commercial *White Russian* ripens with *Red Fife*, though some selected strains ripen earlier. *White Russian* differs from *Red Fife* chiefly in having longer heads, and larger and softer kernels, which produce flour of poor bread-making quality, though very suitable for biscuits and pastry. This variety often gives excellent crops, especially on light soils in Eastern Canada. It suffers very badly from rust in some sections.

Marquis Group—Early Ripening Varieties.

The wheats in this group are extremely productive, surpassing those in the *Red Fife* group, and maturing usually from 3 to 12 days earlier.

Marquis, Ottawa 15.—The leading wheat of Canada; straw stiff and rather short, heads beardless, grain does not readily shell out before cutting and is, of course, a little harder to thresh than other sorts. The kernels are rather short, dark red and hard, and yield excellent flour. Very productive, especially on rich soils and in rather dry climates; not particularly desirable where the climate is moist.

Huron, Ottawa 3.—Straw stiff and rather long, heads bearded, kernels rather long, dark red, hard. Makes very good flour and bread of a somewhat yellowish colour; the bread being light but not usually so light as the made from *Marquis* or *Red Fife*. Extremely productive under a variety of conditions; probably the best wheat to grow in most places where the highest baking quality and extreme earliness are not required. *Preston* (bearded) and *Stanley* and *Percy* (beardless) are similar in most respects to *Huron*. On the whole, they are inferior to this latter.

Early Red Fife, Ottawa 16.—This is a selection from ordinary *Red Fife*, from which it differs in some respects: it is distinctly earlier in ripening, has larger kernels and somewhat blunt heads, and is (in some climates) rather more susceptible to rust than the parent sort. Its milling and baking qualities are the same as those of *Red Fife*. It is one of the best sorts to grow in rather dry districts in central and western Canada where a rather early-ripening wheat is needed and where rust is not much feared. It does very well in the eastern provinces also.

Ruby Group—Very Early Ripening Varieties.

These varieties usually ripen from 3 to 12 days earlier than those in the *Marquis* group; but as a rule the latter are more productive.

Ruby, Ottawa 623.—A beardless wheat, ripening considerably earlier than any member of the *Marquis* group. Kernels hard, red, yielding flour of excellent colour and high quality. Straw of very fair length and strength. The grain threshes out easily. Very valuable for localities where there is a moderate rainfall and where *Marquis* ripens too late. This variety is new, having been introduced in 1918.

Pioneer, Ottawa 195.—A bearded variety with hard, dark red kernels. Milling and baking qualities excellent. Threshes out easily. Is susceptible to diseases in moist climates and is rather weak in straw when the straw grows long. Adapted to certain rather dry districts where *Marquis* ripens too late.

Prelude Group—Extremely Early in maturing.

Prelude, Ottawa 135.—Stands alone at present in a class by itself on account of ripening 5 to 8 days earlier than *Ruby*. *Prelude* should not be expected to give as

high a yield as later-maturing sorts, in seasons favourable to the latter; but it gives very good crops under reasonable conditions. Its kernels are hard, red, plump and extremely heavy. As they shell out readily, this wheat should always be cut on the green side. Flour from this variety is of very high baking strength but not pale enough to be given the highest rank for colour. The heads are short, downy and bearded, and the straw is short but stands up well. This is the best wheat for districts where there is a tendency towards the production of too long straw and where the greatest possible earliness is essential. One or more new varieties will probably be added to this group very soon.

Durum Group—The So-called "Macaroni" Wheats.

It is necessary to mention these wheats as a separate group because they are so different from the ordinary varieties: the large size and excessive hardness of their kernels rendering them very unpopular with most Canadian millers. While it is true that some durum varieties are used for the manufacture of macaroni, to designate the whole group as "macaroni" wheats gives an incorrect impression. Some of the varieties here included are excellent for bread-making while others are very poor. The great outstanding quality of the durum wheats, which will ultimately make them important in some parts of Canada, is their ability to resist drought. Most of these wheats are bearded, late in ripening and not very strong in the straw.

Kubanka is of the highest quality for bread-making. The colour of the flour is bright, pale yellow.

Goose or *Wild Goose* is a productive variety of inferior bread-making quality.

Oats.

Banner or *American Banner*.—The most popular variety and certainly one of the best. Straw of good length and fair strength, kernels long, not early in ripening, very productive, succeeding best on rather heavy soil. The selected strain of this variety grown on the Dominion Experimental Farms is called *Banner, Ottawa 49*.

Victory (also called *Seeger* and *Conqueror*).—A Swedish variety which closely resembles *Banner* and is perhaps equally desirable.

Siberian.—A selected strain of this oat has been introduced as *Ontario Agricultural College No. 72*. This is very productive but late in ripening. The straw is longer, and appears to be weaker, than that of *Banner*, but, especially on light soils and in districts where the season is long, the O.A.C. No. 72 is one of the very best sorts.

Gold Rain or *Golden Rain*.—An excellent Swedish sort, the rapid spreading of which is hindered by the fact that the hull is of a decided yellow colour, instead of being straw-coloured as in most varieties. This objection should be of very little importance. *Gold Rain* is slightly earlier than *Banner* in ripening, gives an excellent yield and has a higher weight per bushel, as a rule, than any other common variety. In strength of straw, it is about the same as other good sorts.

Ligowo.—Usually a little below *Banner* in productiveness but somewhat earlier in ripening. On the whole not quite so desirable, in most localities, as *Banner*.

Daubeney.—Very early in ripening. Generally produces straw of satisfactory length. Kernels long and thin, but with a good percentage of kernel to hull. The selected strain of this oat grown on the Dominion Experimental Farms is designated as *Daubeney, Ottawa 47*. There are other varieties which ripen earlier than *Daubeney* but they are inferior in some respects. *Daubeney* is early enough for almost any special purpose or short season. Very early varieties are not expected to yield as large crops as later sorts, but *Daubeney* is remarkably productive, considering its earliness.

Hullless oat: Liberty, Ottawa 480.—An early ripening sort, producing straw of fair length and giving a good yield. Not equal in productiveness, however, to the best oats of ordinary type. On account of the fact that it gives up its hull in the threshing,

this oat is of very great value for grinding to produce feed for young pigs and young chickens. It also makes remarkably good oatmeal for human consumption.

This is a new cross-bred variety introduced in 1918.

Barley (Six-row Varieties).

Manchurian, Ottawa 50.—This is a selection from a kind of six-row barley supposed to be of Asiatic origin. It ripens early (as do practically all the six-row types) and has straw of fair length and strength. In very windy climates, this barley shows a tendency for the heads to break off and the kernels to be knocked from the heads. The awns are sometimes persistently retained when the grain is threshed. Both of these features are objectionable, but, nevertheless, the great productiveness of this variety makes it very popular over large areas of country.

Ontario Agricultural College No. 21 is also a selection from barley of supposed Asiatic origin. This is a very good variety which resists wind better than *Manchurian* and drops its awns more readily. It gives a large yield. The O.A.C. No. 21 has two slight disadvantages: it is very liable to smut and the threshed grain is of an unattractive colour.

Albert, Ottawa 54 is an extremely early-ripening six-row barley which is valuable whenever the maximum of earliness is essential. It gives very fair yields. This is a new variety introduced in 1918.

Barley (Two-row Varieties).

These are much less commonly grown in Canada than the six-row sorts, but are more desirable for certain conditions.

Duckbill, from which *Duckbill, Ottawa 57* is a selection, is one of the most popular sorts and the only one which can usually be found in commerce in this country.

Chevalier is occasionally grown. There are several strains of this type, among which *Charlottetown No. 80* deserves special mention. This selection was made on the Dominion Experimental Station for Prince Edward Island and is well suited to conditions there. In some seasons, this barley drops most of its awns before harvest.

Gold is a very prolific variety of Swedish origin. It has very short straw.

Hooded Barleys.

Beardless, or more properly *hooded* barleys are attractive because of the absence of awns and on account of their earliness in ripening, but all those kinds which are now in commerce are unsatisfactory. *Success* and *Champion* are two of them.

Hulless Barleys.

These are very desirable for feeding purposes but, up to the present, no very satisfactory sorts have come before the public. Perhaps the best kind is one from the Himalaya mountains which often goes by the strange name of *Guy Mayle*, a corruption of a foreign word *Guy Malaye*. In Alberta this is occasionally grown with good success. *Hulless White* (beardless) and *Hulless Black* (bearded) are also obtainable in commerce.

Rye.

Spring Rye and *Winter Rye*.—Though different names are used for selected strains of these grains, there are no distinct varieties which can be recommended as superior to all others. Farmers purchasing winter rye would do well to secure seed grown as far north as possible, so as to be reasonably sure of the hardiness of the strain.

Emmer and Spelt.

There are several distinct types of these grains, of varying degrees of coarseness. The best emmers are superior to the best spelts.

Common Emmer is the best sort. It is often sold under the corrupted name "Speltz." It is not a kind of spelt. This grain has been too much advertised. It

may be of value in some very dry districts, but is quite unprofitable in most parts of Canada.

Field Peas.

Only field peas are mentioned here, that is to say, varieties which are grown for the sake of the ripe seed. The colour of field peas may be yellowish, green, blue or brown. The yellowish type is usually the most popular.

Arthur, Ottawa 18.—A productive variety of rather early-ripening habit. The flowers are borne chiefly in a bunch at the tip of the main stalk. The peas are yellowish and of medium size.

Mackay, Ottawa 25.—A remarkably productive variety but later in ripening than Arthur and hence less desirable in many sections of Canada. The peas are yellowish, of medium size, and with a black eye. (This variety has been re-selected, and is being propagated for introduction in 1920.)

Solo.—A very productive Swedish variety of brownish colour and irregular shape.

Golden Vine.—An old, standard pea of yellowish colour and very small size. Not specially productive but rather popular. Not so liable to split in threshing as the larger kinds.

Prussian Blue.—A productive blue pea of medium size.

Field Beans.

The term "field beans" is used to designate beans grown for the sake of the ripe seed and not for the unripe pod. It is obvious that a sharp line of distinction cannot always be drawn between the two types, because the same variety may be grown for both purposes. For most parts of Canada, rather early-ripening beans are required. The latest-ripening sorts are not mentioned in the following list. Other things being equal, white varieties should usually be grown as these are generally preferred by the public.

Navy, also called Medium White.—A pure white bean of medium size; productive.

White Pea or Small White Pea.—A pure white bean of quite small size; productive.

Norwegian, Ottawa 710.—This is a yellowish-brown bean, of medium size and elongated shape, a selection made from a variety received from Norway. It is not claimed that this is very different from similar brown beans grown under other names. It is a very early-maturing sort and, considering its earliness, remarkably productive. At Ottawa, when sown towards the end of May, it usually ripens in about 90 days. This variety (which is to be introduced in 1919) is worthy of trial in districts where the season is too short to ripen the ordinary kinds.

Yellow Six Weeks.—A very early variety, grown in Eastern Canada, both as a table bean and as a field bean.

Flax.

Flax is grown chiefly on the great central plains, where seed production is the object in view. In some other parts of Canada, especially in southern Quebec and in southwestern Ontario, flax is cultivated for its fibre, the seed being also saved, of course. So far as climate and soil conditions are concerned, flax for fibre could certainly be grown to advantage in some of the rather moist districts of Alberta and British Columbia.

Flax for Seed.

Novelly, Ottawa 53.—This is a very productive selection from a variety supposed to be of Russian origin. Judging by tests covering a few seasons only, this is the most productive variety of flax cultivated, at present, in Canada. It produces plants of moderate length only. (To be introduced in 1919).

Premost.—This Minnesota selection is productive and popular.

North Dakota Resistant No. 52.—This appears to be the most productive of the North Dakota selections. It is somewhat like Premost.

Flax for Fibre.

Longstem, Ottawa 52.—This new selection (to be introduced in 1919) produces plants of quite unusual length, and appears to be unsurpassed as a variety for the production of fibre. It does not give a very large crop of seed.

Kostroma is a fairly uniform, commercial flax which has been found very good for fibre production.

Buckwheat.

Buckwheat is a suitable crop for light soils in rather cool and moist climates. It will not do well if hot, dry weather occurs.

Rye buckwheat is certainly one of the most productive varieties. Indeed it appears to surpass all others in yield. It also gives a good growth of plants and is, therefore, a satisfactory sort for smothering weeds and for ploughing under.

Silverhull is popular on account of its bright appearance, and its superior qualities for flour-making.

VARIETIES RECOMMENDED BY THE DOMINION CEREALIST.

The varieties are arranged approximately in the order of their merits, those most generally suitable being put at or near the head of the list. Varieties, the names of which are enclosed in brackets, are considered less desirable than the others, for most conditions.

MARITIME PROVINCES.

Spring Wheat.—Huron Ottawa 3, Early Red Fife Ottawa 16, (Marquis Ottawa 15).

Oats.—Banner Ottawa 49, Victory, Gold Rain, (Ligowo), Liberty Ottawa 480 (hull-less).

Barley.—Manchurian Ottawa 50, O.A.C. No. 21, Charlottetown No. 80, Gold, Duckbill Ottawa 57.

Field Peas.—Arthur Ottawa 18, Golden Vine, Solo.

Field Beans.—Navy, White Pea, Yellow Six Weeks, Norwegian Ottawa 710.

Buckwheat.—Silverhull, Rye.

Flax for fibre.—Longstem Ottawa 52, (Kostroma).

QUEBEC.

Spring Wheat.—Huron Ottawa 3, Early Red Fife Ottawa 16, Ruby Ottawa 623 (very early), Marquis Ottawa 15, Prelude Ottawa 135).

Oats.—Banner Ottawa 49, Victory, Gold Rain, Daubeney Ottawa 47 (very early, (Ligowo), Liberty Ottawa 480 (hull-less).

Barley.—Manchurian Ottawa 50, O.A.C. No. 21, Albert Ottawa 54 (very early), (Duckbill Ottawa 57).

Field Peas.—Arthur Ottawa 18, Solo, Mackay Ottawa 25, (Golden Vine).

Field Beans.—Norwegian Ottawa 710, Yellow Six Weeks, Navy, White Pea.

Buckwheat.—Silverhull, Rye.

Flax for fibre.—Longstem Ottawa 52, (Kostroma).

ONTARIO.

Winter Wheat.—Egyptian Amber, Dawson's Golden Chaff.

Spring Wheat.—Huron Ottawa 3, Early Red Fife Ottawa 16, Marquis Ottawa 15, Ruby Ottawa 623 (for northern sections only), (Kubanka, Goose).

Oats.—Banner Ottawa 49, Victory, O.A.C. No. 72, Gold Rain, (Ligowo), Daubeney Ottawa 47 (for northern districts only), Liberty Ottawa 480 (hull-less).

Barley.—Manchurian Ottawa 50, O.A.C. No. 21, Albert Ottawa 54 (very early), (Duckbill Ottawa 57).

Field Peas.—Arthur Ottawa 18, Solo, Mackay Ottawa 25, (Golden Vine).

Field Beans.—Navy, White Pea, Norwegian Ottawa 710.

Buckwheat.—Silverhull, Rye.

Flax for fibre.—Longstem Ottawa 52, (Kostroma).

MANITOBA.

- Spring Wheat*.—Marquis Ottawa 15, Red Fife Ottawa 17, Ruby Ottawa 623 (very early), (Prelude Ottawa 135, earliest).
Oats.—Banner Ottawa 49, Victory, Gold Rain, Daubeney Ottawa 47 (very early), (Ligowo), Liberty Ottawa 480 (hulless).
Barley.—Manchurian Ottawa 50, O.A.C. No. 21, Albert Ottawa 54 (very early).
Field Peas.—Arthur Ottawa 18, Mackay Ottawa 25, Prussian Blue.
Field Beans.—Norwegian Ottawa 710, Yellow Six Weeks.
Flax for seed.—Novelty Ottawa 53, North Dakota Resistant No. 52, Premost.

SASKATCHEWAN.

- Spring Wheat*.—Marquis Ottawa 15, Red Fife Ottawa 17, Early Red Fife Ottawa 16, Ruby Ottawa 623 (very early), Prelude Ottawa 135 (earliest), (Pioneer Ottawa 195, Kubanka).
Oats.—Banner Ottawa 49, Victory, Gold Rain, Ligowo (slightly early), Daubeney Ottawa 47 (very early), Liberty Ottawa 480 (hulless).
Barley.—O.A.C. 21, Manchurian Ottawa 50, Albert Ottawa 54 (very early), (Duckbill Ottawa 57).
Field Peas.—Arthur Ottawa 18, Mackay Ottawa 25, (Golden Vine).
Field Beans.—Norwegian Ottawa 710, Yellow Six Weeks.
Flax for seed.—Novelty Ottawa 53, North Dakota Resistant No. 52, Premost.

ALBERTA.

- Winter Wheat*.—Turkey Red and Kharkov.
Spring Wheat.—Marquis Ottawa 15, Early Red Fife Ottawa 16, Red Fife Ottawa 17, Huron Ottawa 3, Ruby Ottawa 623, (Pioneer Ottawa 195), Prelude Ottawa 135 (earliest), (Kubanka).
Oats.—Banner Ottawa 49, Victory, Gold Rain, (Ligowo), Daubeney Ottawa 47 (very early), Liberty Ottawa 480 (hulless).
Barley.—O.A.C. No. 21, Manchurian Ottawa 50, Duckbill Ottawa 57, Albert Ottawa 54 (very early).
Field Peas.—Arthur Ottawa 18, Mackay Ottawa 25, Prussian Blue, Golden Vine.
Field Beans.—Norwegian Ottawa 710, Yellow Six Weeks.
Flax for seed.—Novelty Ottawa 53, Premost, North Dakota Resistant No. 52.
Flax for fibre.—Longstem Ottawa 53, (Kostroma).

BRITISH COLUMBIA.

In this province the climatic variations are extreme—far greater than in any other part of the Dominion. Every variety in the following list is desirable for some localities, but may be entirely unsuited to other places. A careful study of the descriptions given in the early pages of this pamphlet should be made before deciding what sorts to sow.

- Winter Wheat*.—Egyptian Amber, Dawson's Golden Chaff, Turkey Red, Kharkov.
Spring Wheat.—Huron Ottawa 3, Early Red Fife Ottawa 16, Marquis Ottawa 15, Red Fife Ottawa 17, Ruby Ottawa 623 (very early), Prelude Ottawa 135 (earliest), (Pioneer Ottawa 195, Kubanka).
Oats.—Banner Ottawa 49, Victory, Gold Rain, (Ligowo), Daubeney Ottawa 47 (very early), Liberty Ottawa 480 (hulless).
Barley.—Manchurian Ottawa 50, O.A.C. No. 21, Duckbill Ottawa 57, Chevalier, Albert Ottawa 54 (very early).
Field Peas.—Arthur Ottawa 18, Mackay Ottawa 25, Golden Vine.
Field Beans.—Navy, White Pea, Norwegian Ottawa 710, Yellow Six Weeks.
Buckwheat.—Silverhull, Rye.
Flax for fibre.—Longstem Ottawa 53, (Kostroma).



